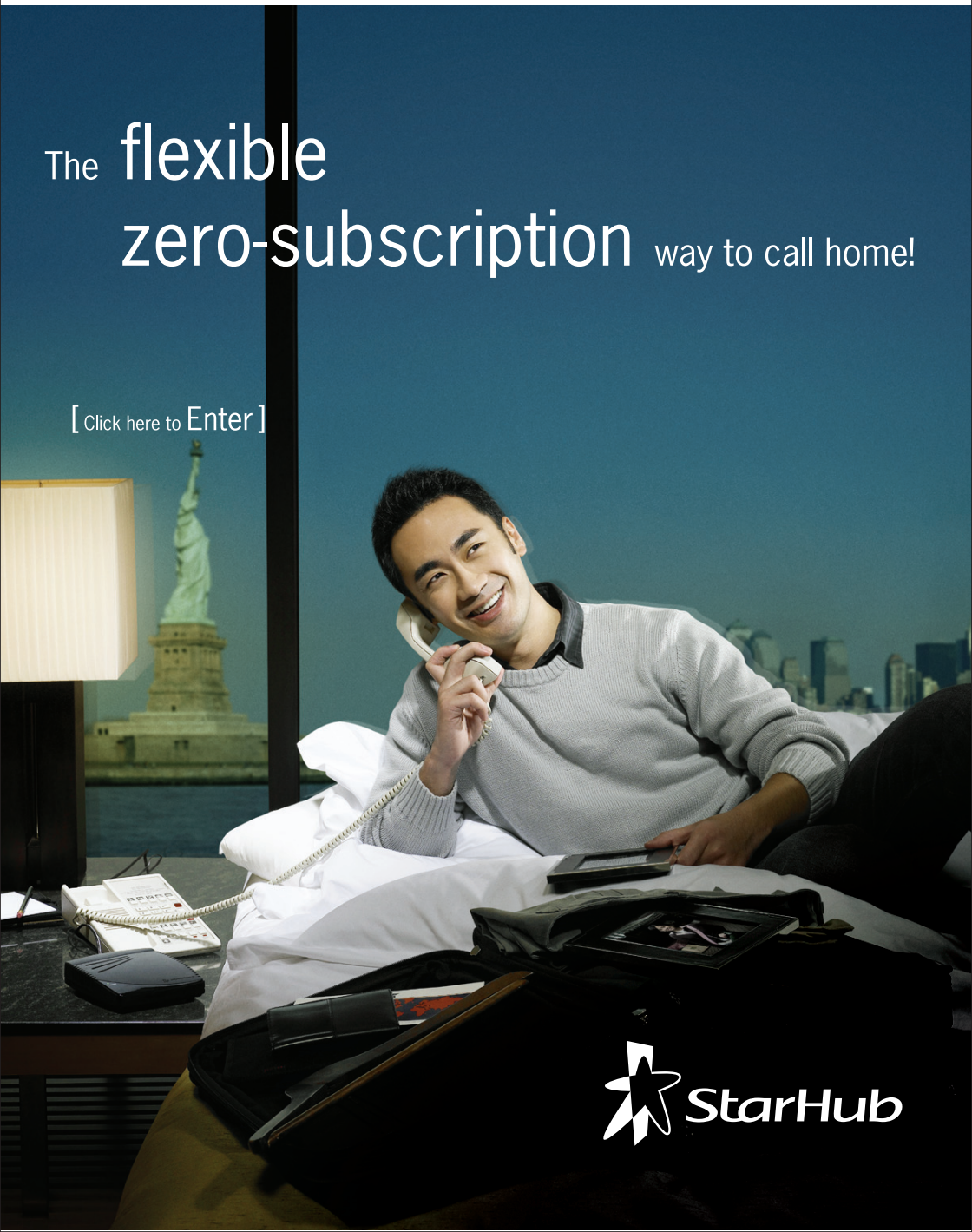
Digital Voice Travel
User Guide

Version 2.1



Dear Valued Customer

Welcome to a new hubbing lifestyle

As a full-service media and info-communications company, StarHub is a premier source for information, communications and entertainment. Leveraging on the convergence of technologies, we hope to make it easier for you, our valued customer to enjoy a full suite of services from us.

When you are empowered by the convenience created through these convergent technologies, you are "hubbing". You may be surfing the net, sending an SMS, chatting with a friend, logging on to the network, streaming videos, downloading music or just watching television – you are simply enjoying the benefits of hubbing, all from one source.

As a StarHub Digital Voice Travel customer, you will be assured of quality, unlimited overseas calls via the portable integrated access device (IAD). What's more, you will also enjoy free calls to Singapore from anywhere in the world!

Moving forward, you will have our commitment in continuing to provide prompt and friendly customer service, so that your total experience with us will be a pleasant and rewarding one. Our dedicated Customer Care Consultants are only a phone call away. Last but not least, we also aim to provide you, our valued customer, a wide range of privileges under our StarHub Rewards programme. Do visit www.**starhub**.com/rewards for more details.

For your convenience, we have provided a handy reference guide to our Digital Voice Travel service. To have a better understanding of its varied features, please review the contents of this guide.

We promise you an exciting time ahead as we continue to introduce new and innovative products and services. Do keep a lookout for them. Once again, thank you for choosing StarHub.

Warm regards

Mike Reynolds
Head, Integrated Products & Marketing

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DISCLAIMER

Please note that all information provided in this User Guide is correct as at date of production.
For more information, please check the latest online updates and terms and conditions at our website at www.**starhub**.com/voice

Our Commitment To Serve You Better

Quality Digital Voice

With StarHub's Digital Voice Travel service, you now enjoy unlimited overseas calls[#] using the portable integrated access device (IAD). What's more, Digital Voice Travel also offers you free[+] calls when you call a Singapore-registered number from anywhere in the world using the IAD. That means, you can still be connected to your loved ones, wherever you are!

If you have any feedback on how we can enhance our services, we will be happy to hear from you. From time to time, we may carry out customer satisfaction surveys for our services. We hope you will take the time to give us your feedback so that we can make every effort to ensure you receive the premium service you've come to expect from StarHub.

[#] Valid for calls made between Digital Voice Travel lines with StarHub-approved IADs only.
[+] Valid till 31 December 2007. Terms and Conditions apply.

StarHub

Customer Care

At StarHub, we are committed to provide quality service. Our Customer Care Hotline operates daily.

As our valued customer, we are always there to assist when you:

1. Upgrade your StarHub services.
2. Request for installation of an additional cable point.
3. Require technical support.
4. Want to find out more about StarHub's latest promotions and offers.

For Customer Care enquiries, please call 1633.

Alternatively, you may like to fax your enquiries to 6725 1603 or send us an email at customerservice@**starhub**.com.

We will also be happy to serve you at the following Customer Service Centres:

- 1 Raffles Place, #B1-02 OUB Centre, Singapore 048616
  (Open from 9am to 8pm, daily)
- 4 Tampines Central 5, #02-27/28, Tampines Mall, Singapore 529510
  (Open from 10.30am to 9pm, daily)
- 68 Orchard Road, #02-01, Plaza Singapura, Singapore 238839
  (Open from 10.30am to 9pm, daily)

For StarHub Redemption requests, please proceed to:

- 59 Killiney Road, Singapore 239521
  (Open from 10am to 8pm, daily)

StarHub Customer Benefits

StarHub Rewards Loyalty Programme

As our valued customer, you will be able to enjoy a host of exciting year-round perks under our StarHub Rewards loyalty programme:

- **STARHUB REWARDS DAILY WINNER**
  Every day, we will pick a lucky customer to be our winner for the day. If you are our lucky customer, you will receive $80 credited into your StarHub account to offset future subscription charges. Daily winners who are Hub Club members will get double rewards with $160 credited into their winning StarHub account.

- **STARHUB REWARDS BIRTHDAY TREATS**
  You will get to enjoy exclusive discounts on exciting birthday treats to make your birthday a truly memorable one. Look out for the list of participating merchants in our monthly newsletter.

- **STARHUB REWARDS PRIVILEGES**
  As a privileged StarHub customer, you'll be able to enjoy a wide variety of exciting lifestyle promotions every month. Watch out for these surprise treats in our monthly newsletter.

- **STARHUB REWARDS ANNUAL LUCKY DRAW**
  As a gesture of our appreciation for your support, you will stand a chance of winning exciting prizes in our annual lucky draw. For every $10 that you spend on StarHub services, you will be given 1 chance. So the more services you subscribe to, the greater your chances of winning the fabulous prize that we have in store.

- **STARHUB REWARDS MONTHLY POINTS**
  You can now get even more value for your monthly expenditure with StarHub, because for every dollar you spend on StarHub services, you will be awarded 1 StarHub Rewards Monthly Point. You can use the points to redeem for attractive gifts, add more StarHub services and enjoy great savings.

Terms and conditions apply for the above. Please refer to www.**starhub**.com/rewards for more details.

Subscription Information

Billing Information

As a new StarHub customer, we would like to take this opportunity to help you understand the billing process and payment modes:

- **MONTHLY PAYMENT**

  Upon installation of integrated access device (IAD), you will be billed the installation charge. Thereafter, you will receive a monthly bill reflecting your subscription and usage charges. Please note that subscription charges are billed one month in advance. The payment due date as well as details of the charges will be indicated on the bill.

- **LATE PAYMENT**

  A reminder will be sent when payment is not made by the payment due date. Your services may be suspended if there is any outstanding amount from your previous bill(s). A reconnection fee of $10.70 (w/GST) will be charged for each line.

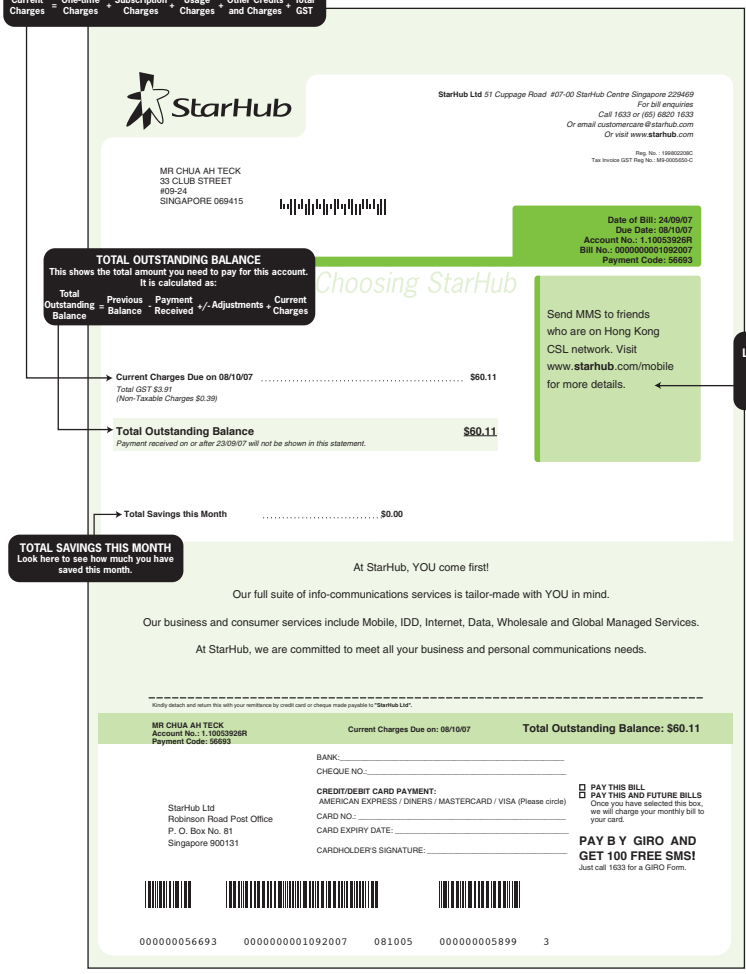
- **INTERIM BILL**

  We will send you an interim bill if your charges become exceptionally high. All interim bills require immediate payment to avoid suspension of service.

If you would like to check the latest status of your payment or have any other billing enquiries, please feel free to call our Customer Care at 1633 or (+65) 6820 1633 when you are calling from overseas or fax to us at 6720 5000. Alternatively, you may like to send us an email at customercare@**starhub**.com or visit www.**starhub**.com.

CURRENT CHARGES
This shows current charges incurred for this bill. It is calculated as:

Current Charges = One-time Charges + Subscription Charges + Usage Charges + Other Credits and Charges + Total GST



StarHub

StarHub Ltd *51 Cuppage Road #07-00 StarHub Centre Singapore 229469*
For bill enquiries
Call 1633 or (65) 6820 1633
Or email customercare@starhub.com
Or visit www.starhub.com

Reg. No. : 199802209C
Tax Invoice GST Reg No.: M9-0005550-C

MR CHUA AH TECK
33 CLUB STREET
#09-24
SINGAPORE 069415

Date of Bill: 24/09/07
Due Date: 08/10/07
Account No.: 1.10053926R
Bill No.: 0000000001092007
Payment Code: 56693

TOTAL OUTSTANDING BALANCE
This shows the total amount you need to pay for this account. It is calculated as:

Total Outstanding Balance = Previous Balance - Payment Received +/- Adjustments + Current Charges

Choosing StarHub

Send MMS to friends who are on Hong Kong CSL network. Visit www.starhub.com/mobile for more details.

LATEST UPDATES
Find out the latest update from StarHub here

Current Charges Due on 08/10/07 ..... **$60.11**
Total GST $3.91
(Non-Taxable Charges $0.39)

Total Outstanding Balance **$60.11**
Payment received on or after 23/09/07 will not be shown in this statement.

Total Savings this Month **$0.00**

TOTAL SAVINGS THIS MONTH
Look here to see how much you have saved this month.

At StarHub, YOU come first!

Our full suite of info-communications services is tailor-made with YOU in mind.

Our business and consumer services include Mobile, IDD, Internet, Data, Wholesale and Global Managed Services.

At StarHub, we are committed to meet all your business and personal communications needs.

Kindly detach and return this with your remittance by credit card or cheque made payable to **"StarHub Ltd".**

MR CHUA AH TECK
Account No.: 1.10053926R
Payment Code: 56693

Current Charges Due on: 08/10/07

Total Outstanding Balance: $60.11

BANK:_____
CHEQUE NO.:_____

CREDIT/DEBIT CARD PAYMENT:
AMERICAN EXPRESS / DINERS / MASTERCARD / VISA (Please circle)
CARD NO.: _____
CARD EXPIRY DATE: _____
CARDHOLDER'S SIGNATURE: _____

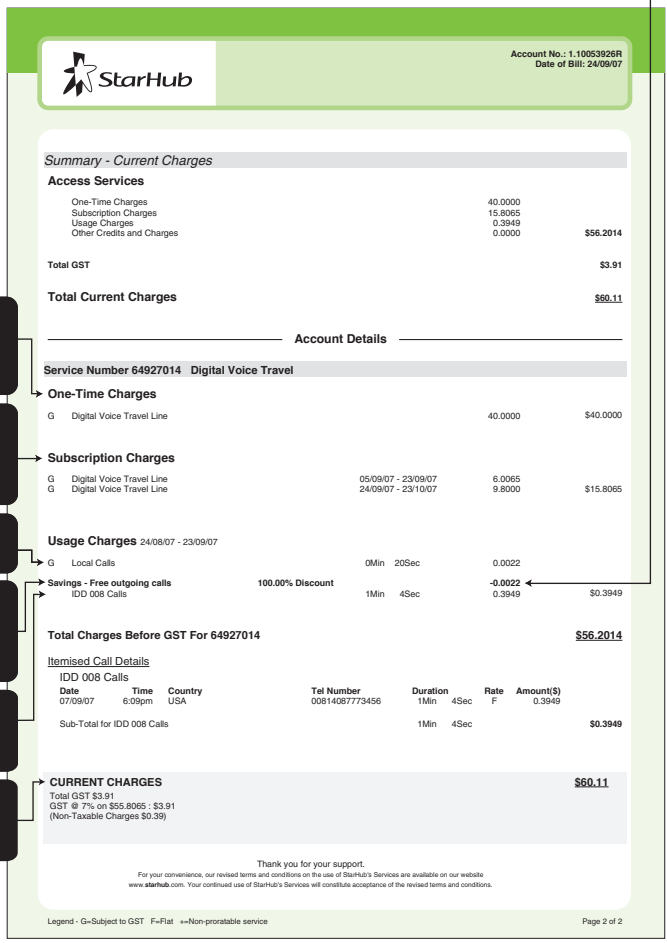
☐ **PAY THIS BILL**
☐ **PAY THIS AND FUTURE BILLS**
Once you have selected this box, we will charge your monthly bill to your card.

PAY BY GIRO AND GET 100 FREE SMS!
Just call 1633 for a GIRO Form.

StarHub Ltd
Robinson Road Post Office
P. O. Box No. 81
Singapore 900131

000000056693 0000000001092007 081005 000000005899 3

SAVINGS ON IDD 008 CALLS
You have saved this amount from all the IDD 008 calls made for the month.



StarHub

Account No.: 1.10053926R
Date of Bill: 24/09/07

Summary - Current Charges

Access Services

One-Time Charges	40.0000	
Subscription Charges	15.8065	
Usage Charges	0.3949	
Other Credits and Charges	0.0000	**$56.2014**

Total GST **$3.91**

Total Current Charges **$60.11**

Account Details

Service Number 64927014 Digital Voice Travel

One-Time Charges

G	Digital Voice Travel Line	40.0000	$40.0000

Subscription Charges

G	Digital Voice Travel Line 05/09/07 - 23/09/07	6.0065	
G	Digital Voice Travel Line 24/09/07 - 23/10/07	9.8000	$15.8065

Usage Charges 24/08/07 - 23/09/07

G	Local Calls	0Min	20Sec	0.0022	
Savings - Free outgoing calls	**100.00% Discount**			**-0.0022**	
	IDD 008 Calls	1Min	4Sec	0.3949	$0.3949

Total Charges Before GST For 64927014 **$56.2014**

Itemised Call Details

IDD 008 Calls

Date	Time	Country	Tel Number	Duration	Rate	Amount($)
07/09/07	6:09pm	USA	00814087773456	1Min 4Sec	F	0.3949
Sub-Total for IDD 008 Calls				1Min 4Sec		**$0.3949**

CURRENT CHARGES **$60.11**
Total GST $3.91
GST @ 7% on $55.8065 : $3.91
(Non-Taxable Charges $0.39)

Thank you for your support.
For your convenience, our revised terms and conditions on the use of StarHub's Services are available on our website www.starhub.com. Your continued use of StarHub's Services will constitute acceptance of the revised terms and conditions.

Legend - G=Subject to GST F=Flat ⇔Non-proratable service

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ONE-TIME CHARGES
Any one-time charge and/or registration fee for new Value-Added Service(s) is reflected here.

SUBSCRIPTION CHARGES
These are the monthly subscription charges for your Digital Voice line and/or any optional Value-Added Service.

GST
Items indicated by "G" are subjected to prevailing GST rate.

SAVINGS
Every time you enjoy savings with StarHub, it is highlighted like this. So it's easy for you to see the savings you enjoy each month.

IDD 008/018 CALLS
All outgoing international calls made from Singapore through StarHub's IDD 008/018 are reflected here.

For your convenience, your StarHub bill ends with your Current Charges. It's your quick and easy reference for the month.

Payment Modes

BY GIRO

You can enjoy the convenience of paying your bills automatically through GIRO. Obtain the GIRO application form from our website at www.starhub.com or any StarHub Customer Service Centre. Alternatively, you can request for a form through our Customer Care at 1633.

BY CREDIT CARD

We accept payments by major credit cards. You have the option of using your credit card for payment of the current bill and monthly deduction of all subsequent bills or for payment of the current bill only. Please fill in your credit card details and indicate your option on the original payment slip.

BY CHEQUE

Cross your cheque and make it payable to "StarHub Ltd". Write your name, account numbers and payment codes on the back of the cheque and mail it together with the original payment slips to:

Robinson Road Post Office
P.O. Box 81
Singapore 900131

If your cheque payment is for more than one account, please indicate the amount for each account on the respective payment slips.

Please do not send post-dated cheques or cash through the mail.

Note: The Payment Code is located at the top right hand corner of the StarHub bill.

PAYING IN PERSON

1. Post Office and Self-service Automated Machines (SAM)

   Payments can be made by cash, cashcard, NETS or VISA and Master Credit Card at any post office. You may also pay at any of the Self-service Automated Machines.

2. AXS Stations

   You can pay your StarHub bills at all AXS Stations. For information on the location of AXS Stations, please visit www.axs.com.sg or call the AXS Customer Service hotline at 6560 2727.

3. 7-Eleven outlets

   You can make payments using cash, CashCard or NETS at any of the local 7-Eleven outlets. For information on the locations of 7-Eleven outlets, please call 7-Eleven Hotline at 6333 3343.

PAYING VIA DBS/PHONE/INTERNET BANKING

For DBS/POSB customers, you can pay via DBS online at www.dbs.com or via 1800-111-1111 for DBS Phone Banking and 1800-339-6666 for POSB Phone Banking.

PAYING VIA CITIBANK PHONE/INTERNET BANKING

For Citibank customers, you can pay via Citibank Online at www.citibank.com.sg or through CitiPhone banking. For enquiries on Citibank's bill payment services, please call 1800-225-5225.

PAYING VIA HSBC PHONE/INTERNET BANKING

For HSBC customers, you can pay via HSBC's Internet Banking at www.hsbc.com.sg or PhoneBanking. For enquiries on HSBC's bill payment services, please call HSBC's Customer Service Hotline on 1800-227-8888.

PAYING VIA UOB PHONE/INTERNET BANKING

For UOB customers, you can pay via UOB online at www.uobgroup.com or via UOB Phone Banking at 1800-222-2121. For enquries on UOB's bill payment services, please call 1800-222-2121.

PAYING VIA VPOST

You can pay your StarHub bills through GIRO-On-Demand at www.vPOST.com.sg. If you do not have a vPOST account, simply register for one at the website.

About Digital Voice Travel

Digital Voice Travel is StarHub's Voice-Over-IP (VoIP) service available to our residential customers. Users of this service must have a broadband access network connection (either cable or ADSL). Calls are made through the integrated access device (IAD), which can be used in any location that has broadband connectivity*, both within and outside Singapore.

Digital Voice Travel gives you access to:

- **Local calls to fixed and mobile telephone lines (StarHub and other operators).**
- **IDD calls (StarHub and other operators)**
- **Operator Assisted IDD (1635)**
- **Directory Enquiry and Operator Assistance services (100)**
- **Local (1800) toll-free services**
- **Local (1900) premium services**
- **International Calling Card (Application and Enquiries)**
- **StarHub Customer Service, billing and fault reporting numbers**
- **Emergency numbers** (995 and 999)**

You also have access to our comprehensive range of Value Added Services such as Call Waiting, Caller Number Display/Non-Display, Voice mail, Call Divert (Unconditional), Number Retention, Private Number Listing, Call Transfer etc.

Note: Digital Voice Travel customers have to register with the respective IDD service providers in order to use IDD services that are not offered by StarHub. Please call our Customer Care at 1633 if you wish to bar IDD and 1900 calls on Digital Voice Travel

* Please refer to the technical Information section on the types of broadband services that are supported. Usage of Digital Voice Travel when overseas is subject to conditions imposed by the overseas broadband network service provider so there is no guarantee that the service will always work.

As Digital Voice Travel operates over the public Internet, there is no assured quality of service.

** Calls to emergency numbers are free-of-charge.

Technical Information

Hardware Requirements

To use Digital Voice Travel, you need to have the following items:

- Integrated access device (IAD)

> **Digital Voice Travel currently supports the Motorola VT1005S IAD only.**
> Motorola VT1005S is compatible with almost any Microsoft Windows®, Macintosh®, or UNIX® computers with a 10Base-T or 10/100Base-T Ethernet adapter

Note: Only IAD purchased from StarHub or its authorised resellers can be used for Digital Voice Travel.

- Broadband Internet connection
  The broadband Internet access can either be of a cable (StarHubs' MaxOnline broadband access) or an ADSL connection, with a minimum download speeds of 512Kbps and upload speeds of 256kbps.

Note: Digital Voice Travel will not function with a narrowband connection. (e.g 56Kbps Dial-up access)

- Analogue phone (corded or cordless)

Internal Wiring

If the telephone set is connected directly to the voice port of the IAD, no additional wiring is required. Internal wiring would be required should you wish to locate the telephone set in another room. We recommend using a cordless phone if you do not wish to install internal wiring.

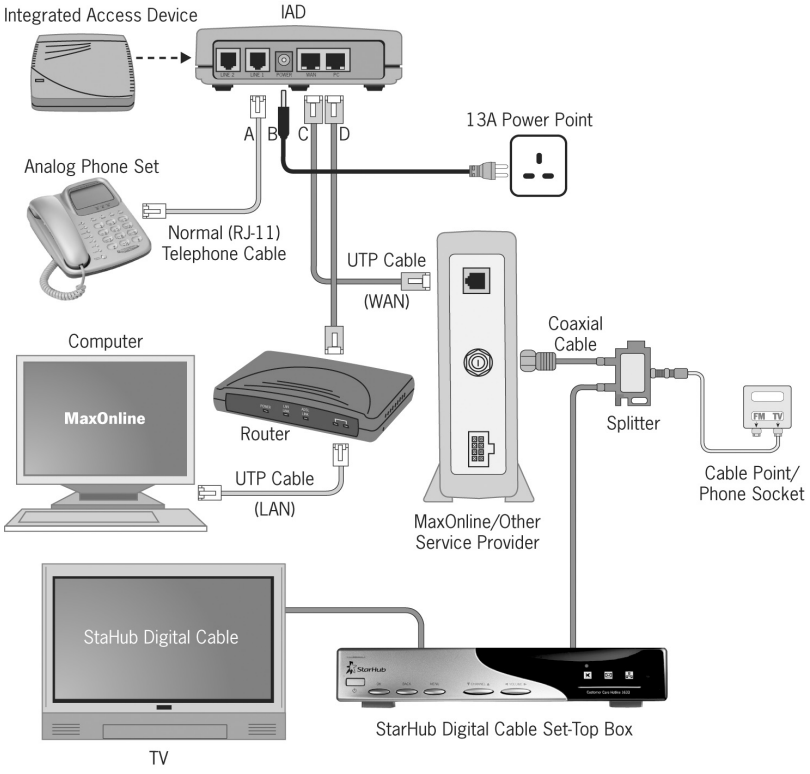
If you require additional wiring, please call our Customer Care at 1633 so that they can advise you on the appropriate type of wiring for the service. We will be happy to arrange for additional cabling for you or you may also wish to enage your own contractors for the job. Please ensure that only approved cables are used for your cabling.

Setting Up Your Digital Voice Travel Connection

Upon subscribing to Digital Voice Travel, this IAD will allow you to connect both a computer and your standard corded or cordless phone set to make voice calls.

We have included some useful tips on how to set up your Digital Voice Travel connection in this handbook. You may wish to refer to them before deciding to call the hotline for technical assistance. Alternatively , you can visit www.**starhub**.com/voice for the latest online updates.

The following diagram shows the typical set-up for a StarHub Digital Cable, MaxOnline and Digital Voice Travel user.



For better voice quality, we recommend that you connect the IAD directly to the cable or ADSL modem instead of connecting behind the router (if applicable).

Front Panel

The following diagram shows the front panel of the IAD.

The POWER light on the front panel lights solid green when it is powered on and operating normally. During start-up and image upgrades, the POWER light will blink as follow:

Blinking	Status of VT1005S
Once	Performing initial boot sequence
Twice	Acquiring its network IP address
Thrice	Downloading configuration file
Four	Registering with network

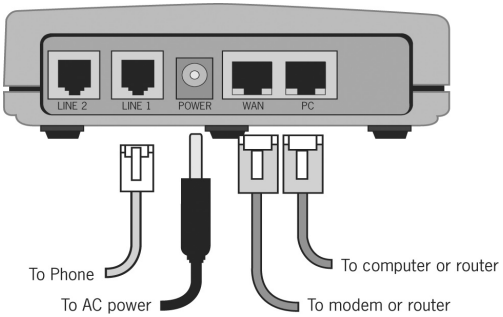
(Example: Motorola VT1005S Voice Terminal)

Note: Never unplug your IAD while the light is blinking continuously. Instead, allow the process to be completed or the unit may become inoperable.

Rear Panel

The following diagram shows the types of connection at the rear panel of the IAD.

The rear panel provides the following connectors:

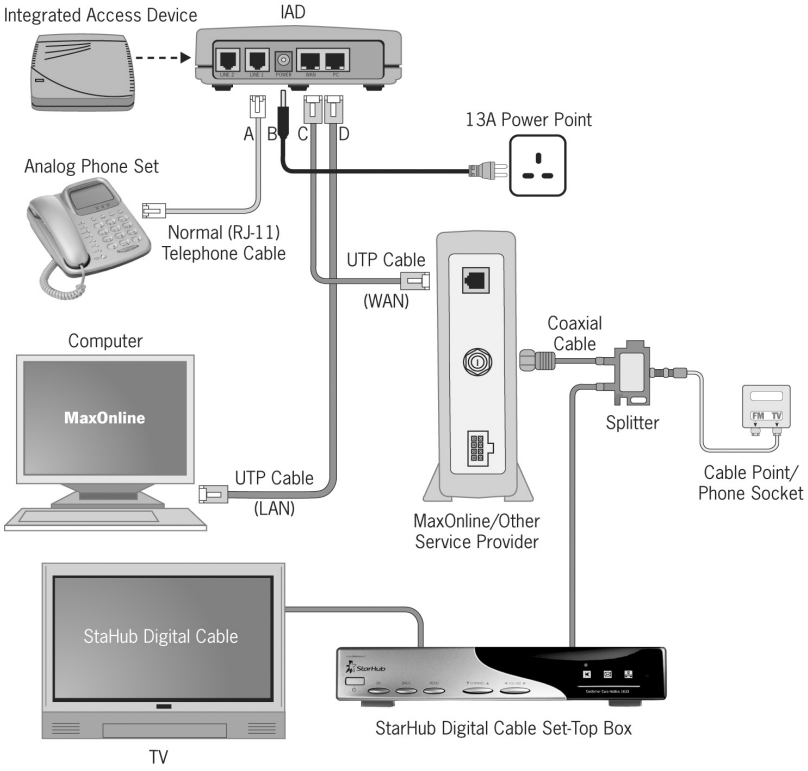


Key

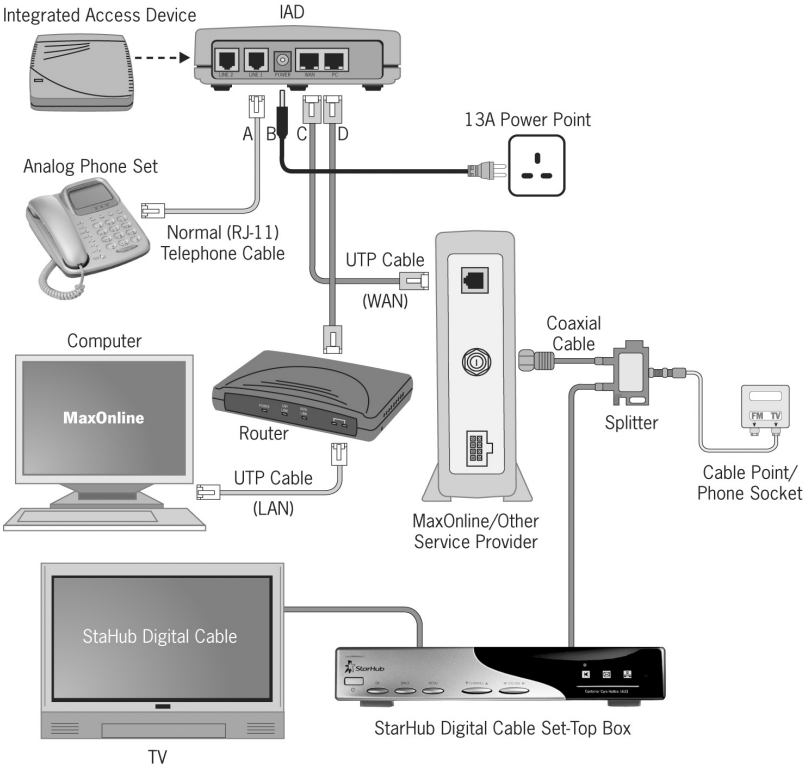
Item	Connection made with:	
LINE 1	**RJ-11**	This is a telephone line port that connects to the first telephone in service.
LINE 2	**RJ-11**	This is a telephone line port that connects to the second telephone in service and should not be use. **Note:** LINE 2 is available only on Motorola VT1005S Voice Terminal IAD only.
POWER	**12V DC/1A**	This where the power adapter can be connected to an AC power outlet.
WAN	**RJ-45**	This is an Ethernet port where you can connect to a broadband network (through a modem, router, switch, or hub).WAN stands for “Wide Area Network”.
PC	**RJ-45**	This is an Ethernet port where you can connect to your computer.

Note: Please refer to the label of your specific IAD use.

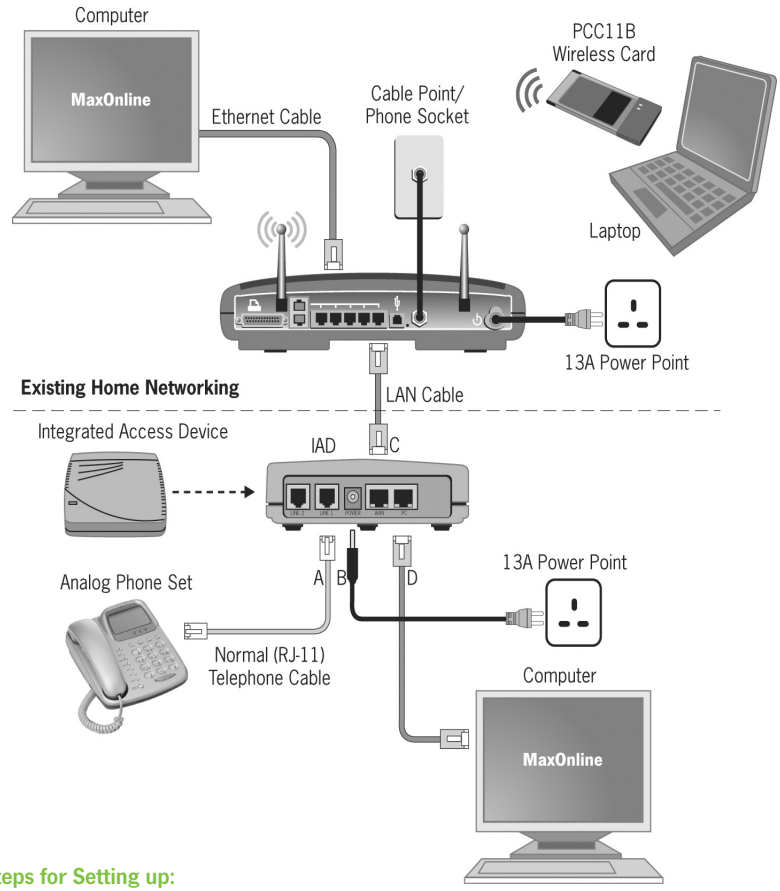
How to connect Digital Voice Travel using a cable or ADSL connection



How to connect Digital Voice Travel using a cable or ADSL connection with an external router



How to connect Digital Voice Travel using a cable or ADSL connection with built-in router.



Steps for Setting up:

1. Ensure that your IAD is unplugged and that the power supply to your modem is turned off.
2. Connect one end of an Ethernet cable (RJ-45) to an open Ethernet LAN port on your modem with built-in router. Connect the other end of this Ethernet cable to the WAN connector on your IAD.
3. Connect a telephone to your LINE 1 connector on your IAD using a RJ-11 telephone cable.
4. Power on your modem. Wait for about 2 minutes for it to start up.
5. Plug the AC power adapter to the POWER connector on your IAD and the electrical outlet. This turns your IAD on.

   Note: You should keep the IAD powered on all the time in order to receive incoming calls.
6. Wait for about 2-5 minutes for the IAD to start up

   Note: Start-up may take longer if the IAD re-configuration takes place or when the Internet is slow/congested.
7. Pick up the telephone handset and listen for a dial tone. If you hear a dial tone, you can now call anyone as you normally would on any telephone. If you do not hear a dial tone, check that all connections as described in this procedure are correct.

NOTE FOR CABLE MODEM USERS:

The following cable modems with built-in routers are supported by StarHub.

- Motorola SBG1000 Cable Modem Gateway
- Linksys Wireless Cable Gateway 200

For other models, please check with Customer Care at 1633 whether they are supported.

Overcoming firewalls in the cable modem with built-in router

There may be firewall options built in the integrated cable modem cum router that may block certain network traffic and may interfere with the use of Digital Voice Travel. If you experience problems with your Digital Voice Travel service and are connecting through a firewall, please perform the following steps to enable UDP ports to and from the IAD:

1. Disable Firewall on the integrated cable modem cum router

   ➔ No additional settings is needed on IAD and cable modem with built-in router to use Digital Voice Travel

2. When Firewall is enabled on the integrated cable modem cum router, there are 2 options available as follows:

   - Configure "Port Forwarding" for the cable modem with built-in router on Port 5060/5061 and 16384-32767

   Refer to Appendix 1 for setting of Port Forwarding. Please also ensure that the firewall policy on the cable modem with built-in router allow the Port specified above. (See Appendix 2: Setting up the firewall for the SBG1000). For Wireless Cable Gateway 200 cable modem with built-in router, Port Forwarding is not required on the Wireless Cable Gateway 200 even though the firewall is enabled.

   - If you are using the Motorola SBG1000 cable modem cum router, bypass the IAD from the Firewall policy and place the IP address of the IAD MAC address, in the De-militarised Zone (DMZ) of the router.

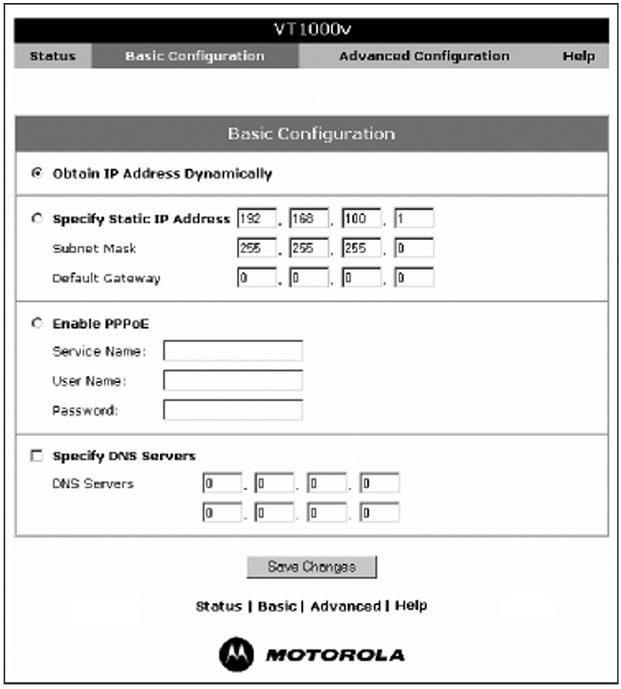
   Note: Please refer to Appendix 2 for Firewall settings

NOTE FOR OTHER ADSL SERVICE PROVIDER USERS:

Basic PPP0E set-up on IAD for ADSL modem without NAT (Network Address Translation)

To perform a PPP0E configuration:

1. Use a Ethernet RJ-45 cable and connect to your computer to the Motorola VT1005S Voice Terminal PC port.
2. Launch your web browser
3. At the address or location field, type http://192.168.102.1 and press ENTER to display the Status Page, which will display the IAD settings
4. Click "Basic Configuration" to display the basic configuration window.



FIELDS	DESCRIPTION
Obtain IP Address Dynamically	This setting is enabled by default. If either of the following is true, configuration on this page is required: Dynamically ~ If you have a cable modem with no router and your cable provider assigns IP addresses dynamically, the IAD obtains its IP address dynamically from your cable provider. ~ If you have a router with DHCP enabled, the IAD adapter obtains its IP address dynamically from your router
Specify Static IP Address	If your broadband provider requires a static IP address, enable Static IP Address and type the Static IP Address and IP addresses for the Subnet Mask, Default Gateway they provide.
Enable PPPoE	If you have a ADSL modem with no NAT, Click enable PPPoE and type Service Name, User Name, and Password provided by your DSL provider.
Specify DNS Servers	Enables you to specify Domain Name System (DNS) servers, if DNS Servers are necessary.

Notes:

(1) If Obtain IP Address Dynamically or Enable PPPoE is selected, Specify DNS Servers is off by default. If required by your broadband provider only, select Specify DNS Servers and type the DNS server IP addresses provided by your broadband provider.

(2) If Specify Static IP Address is selected, Specify DNS Servers is selected by default. If no DNS server is automatically assigned, you need to type the DNS server IP addresses provided by your broadband provider.

(3) Verify that all fields are correctly filled in and click Save Changes. This will require a reboot of the unit. The message "Are you sure?" is displayed. Click OK. Wait for about one minute.

(4) You cannot display the configuration pages while the IAD starts up. After the IAD restarts, click the Web browser Refresh button to display the configuration pages.

(5) Pick up the telephone handset and listen for a dial tone. If you hear a dial tone, you can now start using Digital Voice Travel.

If you are unable to connect to the PPP03 server, you may wish to perform the following steps:

1. Check the PPPOE settings: username and password.
2. Check the cabling between Internet port and DSL modem
3. Check the link lights between the router and the modem
4. Try new cabling between the Internet port and DSL modem

If the above fails, please contact Customer Care at 1633 for assistance.

Overcoming firewall for ADSL modem or ADSL router

If you have an ADSL router, there may be firewall options built in that may block certain network traffic and may interfere with the Digital Voice Travel service. If you experience problems with your Digital Voice Travel service, and are connecting through a firewall, please ensure that the following UDP ports are allowed to and from the IAD

Digital Voice Travel IAD Internet ports:

- SIP ports 5060 through 5061 using UDP protocol
- TFTP port 69 using UDP protocol
- DNS port 53 using UDP protocol
- RTP ports 16384 through 32767 using UDP protocol

Since firewalls may be designed differently, please consult the ADSL modem or router user manual for further information on firewall settings.

For ADSL modem or ADSL router with NAT

The NAT (Network Address Translation) function on your router may block needed communication ports, which will interfere with the Digital Voice Travel. You may need to direct certain ports to be accessible to our network in order to use Digital Voice Travel.

Each router manufacturer has a different process for Port Forwarding (also called Port Opening). In each case, you must always specify two port ranges to be opened:

- 5060 - 5061 (UDP)
- 16384-32767 (UDP)

These ports should be forwarded to the IP address of your Digital Voice Travel. Please refer to your router manual for Port Forwarding configuration instructions.

Troubleshooting

The following are some common problems and their solutions. If the solutions listed here do not solve your problem, you can refer to the FAQ section below or call Customer Care at 1633 for assistance.

PROBLEMS	POSSIBLE CAUSES	SUGGESTED ACTIONS
No Power (Green LED not on/blinking?	Pin not properly plug into the AC power socket Loose connection on both ends of the power cable.	Check that the AC power adapter is properly plugged into the electrical outlet and the IAD. Check that the electrical outlet is working
Unable to Receive/Send Data (if you connect your PC to the IAD)	Loose Ethernet (RJ-45) connection to the WAN port of the IAD or wrong Ethernet port on the IAD used Loose Ethernet (RJ-45) connection to the Ethernet port of the broadband modem (either cable or ADSL) Other Loose cable connections in the network Wrong cable type used Faulty broadband modems Faulty IAD Configuration of applications programs on the computer	Check that the end of the Ethernet cable is connected securely to the WAN port on the IAD Check that the other end of the Ethernet cable is connected securely to Ethernet LAN port of the broadband modem (either cable or ADSL) Check all other cabling connections between the broadband modem, IAD, computer, and if applicable, routers. Check that you used the cables provided with the IAD. All Ethernet cables must be straight-through cables. Check the condition of the broadband modem (please refer to your cable or ADSL modem user Guide). For example, on the Motorola SURFBoard cable modem, the first light from top to bottom that is off indicates the error. For information, please refer to your broadband modem user guide. Check the POWER light on the IAD Front Panel. Check that the applications programs on the computer, e.g. firewall etc. are not restricting the sending or receiving of data packets e.g for internet access

PROBLEMS	POSSIBLE CAUSES	SUGGESTED ACTIONS
No Dial tone	Loose power connection or faulty IAD	Check that the IAD is powered on and in operation mode (the LED on the IAD Front Panel should display a solid green colour light if the IAD is powered on successfully).
	Loose phone connection to the IAD or wrong phone (port on the IAD is used	Check that the telephone cable is connected securely to the correct phone port; ie Line 1 at the rear of the IAD. If you have only ONE telephone line, it should usually be connected to Line 1, unless StarHub has advised you otherwise.
	Loose phone connection to the phone set	Check that the telephone cable is connected securely to your standard telephone set or cordless telephone set.
	Loose Ethernet (RJ-45) connection to the WAN port of the IAD or wrong Ethernet port on the IAD used	Check that the end of the Ethernet cable is connected securely to the WAN port on the IAD
	Loose Ethernet (RJ-45) connection to the Ethernet port of the broadband modem CPE (either cable or ADSL)	Check that the other end of the Ethernet cable is connected securely to Ethernet LAN port of the broadband modem CPE (either cable or ADSL)
	Wrong installation process	Refer to "Setting Up your Digital Voice Travel Connection" installation guide
	IAD not connected to StarHub Digital Voice Travel network (Note: Please confirm that you have internet connection prior to performing this troubleshooting step by checking whether you can send/receive data using your computer.	Power off and then on the IAD. If it still do not work, power off and then on the modem and router (if applicable) followed by power off and on the IAD again. Please ensure you follow the power up/down procedures for your modems/routers. Please also refer to your equipment vendors if unsure. **Note:** When the IAD is powered on for the first time, you may have to wait for up to 5 minutes before it completes the start up sequence and acquires a dial tone.

For latest update on troubleshooting guide, visit http://www.**starhub**.com .

Value-Added Services Guide

Digital Voice Travel comes with a full range of Value-Added Services to serve your telephony needs. For the basic subscription of $10.49 (w/GST) per month, you will be entitled to the following Value-Added Services:

- 3 Party Call
- Call Hold

To facilitate customers with the selection of our array of Value-Added Services, we have 2 specially created bundles, packed with our popular Value-Added Services as follows:

Value Pack

Value Pack is a bundle of Value-Added Services for Digital Voice Travel consisting of:

- Caller Number Display
- Call Waiting
- Call Divert
- Voicemail (without message-waiting indicator)

Value PackPlus

Value PackPlus is a bundle of Value-Added Services for Digital Voice Travel consisting of:

- Caller Number Display
- Call Waiting
- Call Divert
- Voicemail (without message-waiting indicator)
- Caller Number Non-display
- Call Transfer
- Private Number Listing

Value-Added Service Description

The following section describes the full range of Value-Added Services from Digital Voice Travel. If you need further assistance or if you wish to bar IDD and 1900 calls, please call our Customer Care at 1633.

THREE PARTY CALL:

You can talk to two other persons on different lines at the same time.

To begin the conference ➔ dial **(party A's number)** and after party A answers the call, call party B by pressing **flash** key, after which you will hear a secondary dial tone. Next, dial party B's number. After party B answers the call, press **flash** key to activate a Three Party Call.

To begin the conference while on a call with party A ➔ Call party B by pressing **flash** key. You will hear a secondary dial tone. Dial party B's number. When party B picks up the call, press **flash** key to activate a Three Party Call.

Note:

(1) The Digital Voice Travel user who initiates the conference must remain in the conference. Otherwise, all calls will be terminated.

(2) International calls are supported.

CALL HOLD

You can place an active call on hold. For analogue phone sets, you can place an active call on hold by pressing flash key.

Note: Please call Customer Service at 1633 if you wish to bar IDD and 1900 calls on your Digital Voice Travel line.

CALLER NUMBER DISPLAY:

The phone number of an incoming caller is displayed on your phone (which must have caller ID display) or external caller ID display unit.

To apply for this Value-Added Service, please call our Customer Care at 1633 to subscribe to Value Pack or Value PackPlus. Once activated, this service cannot be turned off. To de-activate this service, you will need to call our Customer Care at 1633 to terminate your Value Pack or Value PackPlus subscription.

CALL WAITING:

When you are engaged on a call and someone calls, you will hear an audible call waiting tone consisting of 3 beeps. If you want to take the call, press the flash key on your phone to enable Call Waiting. Calls that you did not take will go to voicemail after timeout.

To activate ➔ Press the **flash** key to put the first caller on hold and talk to the second caller. You can alternate between the 2 callers by pressing **flash** key.

To de-activate ➔If you do not wish to be interrupted in the middle of a call, you can temporarily de-activate Call Waiting by keying ***70**. Once Call Waiting is de-activated, you should hear a short intermittent tone followed by a dial tone after you have pressed ***70**. If you do not hear a dial tone, that means the de-activation of Call Waiting service was unsuccessful.

Note:

(1) Once activated, Call Waiting will be automatically continue with the following calls

(2) You cannot de-activate Call Waiting in the midst of a call

CALL DIVERT

Your incoming calls will be diverted unconditionally to another fixed or mobile number of your choice.

To activate –> dial *72 (the number to divert to)#. During activation, you should hear a fast busy tone as confirmation that the service has been activated.

To de-activate –> dial *73

Note:
(1) You can still make outgoing calls and receive incoming calls (incoming calls will be diverted to the new number).
(2) Your calls would also be diverted if your IAD were not powered on.
(3) You will not hear any special dial tone to inform you that Call Divert is currently activated.

CALLER NUMBER NON-DISPLAY:

The person you are calling will not be able to see your phone number when you call them.

To activate ➜ Call our Customer Care at 1633 to subscribe to Value PackPlus

To de-activate ➜ dial: ***82** before dialing the number you wish to call.

Note:
(1) De-activation is on a per-call basis, i.e. your phone number will be blocked again from the next call you made.
(2) When your phone number is blocked, you may not be able to gain access to certain services that require caller ID to be presented such as StarHub's "Surf For Free"

CALL TRANSFER:

While on a call with party A, you can transfer the call to party B.

To activate ➜ Press flash key. You will hear a secondary dial tone. Then dial party B's number. Wait for party B to answer the call before you disconnect your phone. After that, parties A and B would be connected.

Notes: The number you transfer to can be any local or international fixed or mobile number.

PRIVATE NUMBER LISTING:

Your telephone number will not be listed in the Residential Telephone Directory and our Operator Assistance service will not disclose your telephone number to requestors.

To apply for this Value-Added Service, please call our Customer Care at 1633 to subscribe to Value PackPlus. Once activated, this service cannot be turned off. To de-activate this service, you will need to call our Customer Care at 1633 to terminate your Value PackPlus subscription.

VOICEMAIL

1. DIVERSION TO VOICEMAIL

Your calls will be diverted to your Voicemail when:

- your Digital Voice Travel line is engaged
- your IAD is powered off
- you do not answer the call after 5-6 rings
- your Internet access is disconnected

2. MESSAGE RETRIEVAL

Message Retrieval using your Digital Voice Travel line:

Message Retrieval ➜Dial 1303 (or +65 98501303 if you are overseas) and enter your (Voicemail password)#, Press **1** to access main menu.

Note: Default Voicemail password is 8888. Please change your default password for security reasons.

Message Retrieval using other lines:

You can access your Voicemail from a StarHub Mobile line or other operator's fixed and mobile line.

Message Retrieval ➜ dial: **1303** (or **+65 98501303** if you are overseas) and enter your (Digital Voice Travel number)#(Voicemail password)#. Press 1 to access main menu.

Note:
(1) Default password is 8888. Please change your default password for security reasons.
(2) Digital Voice Travel does not support Message Waiting Indicator, which will alert you when you have message/s in your mailbox.

3. OTHER VOICEMAIL FUNCTIONS

a) Leaving messages in voice mailboxes of other StarHub Digital Voice Travel and StarHub Mobile users: Dial **1302** (or **+65 98501302** if you are overseas) and enter (the other party's Digital Voice Travel or mobile number)#. You will hear the default or personalised greeting "You have reached mailbox number <Digital Voice Travel or mobile number>. Please leave your message after the tone". Leave your message after the tone.

b) **Personalising your own greetings** ➜ Dial 1303 (or +65 98501303 if you are overseas) and enter (your Voicemail password)#
Press **2** to access your greetings menu
To record your greeting, press **2** followed by **3**
To play your greeting, press **2** followed by **1**

4. CHANGING YOUR VOICEMAIL PASSWORD

Digital Voice Travel Voicemail is secured by a password (this password is different from that for your other enhanced services). The default password is 8888. To change your Voicemail password:

a) Dial 1303 and log into your mailbox
b) Press **8** to access your Personal Options menu
c) Press **2** to access your Password Options
d) Press **3** to modify your password. (4 to 7 digits number)
e) Press **#** to confirm the new password

If you have forget your password, please call our Customer Care Consultants at 1633 or +65 68201633 if you are overseas to reset your password to the default password (8888)

Note:
(1) If you are also a StarHub Mobile subscriber, please note that your Digital Voice Travel mailbox is different and separate from that of your mobile voice mailbox.
(2) If you have also subscribed to both Call Waiting and Voicemail, and if your line is engaged, the Call Waiting feature would be activated first. If you do not initiate the Call Waiting function, your call would be transferred to your Digital Voice Travel Voicemail.

Digital Voice Travel
Frequently Asked Questions

What sort of calls can I make with Digital Voice Travel?
You can make local calls to any fixed or mobile telephone line from StarHub and other operators such as SingTel and Mobile One. You can also make IDD calls over StarHub's IDD 008 and IDD 018 service.

Customers who wish to use SingTel's IDD service, Mobile One's IDD service (002, 021) or other IDD service providers (for e.g. 15xx) must register with them first.

Generally, most of the services that are available over your existing SingTel's fixed-line are also available over Digital Voice Travel.

Note: Please call our Customer Care at 1633 if you wish to bar IDD and 1900 calls on Digital Voice Travel.

How do I make local and international calls with Digital Voice Travel?
To make calls to Singapore-registered telephone numbers, dial the normal 8-digit number, just like how you use other fixed-line phone services where no prefixes are required. This applies even when you are overseas.

Note: You can also dial SingTel and M1 fixed or mobile numbers.

To make calls to telephone numbers that are registered in overseas countries, you can dial using StarHub IDD e.g. 008-CC-AC-XXXXXXX (where CC = Country Code, AC = Area Code, XXXXXXXX is the telephone number). This applies even when you are overseas.

Note: You will have to register with the respective Singapore IDD providers (e.g. SingTel) if you are not using StarHub's IDD service.

What do you mean by "One Number For Life"?
You can take your Digital Voice Travel telephone number with you wherever you relocate, and this is not just within Singapore, but also anywhere in the world, without the hassle of carrying different numbers.

Can I keep my existing SingTel number?
Yes. You can take up our Number Retention service by subscribing to ValuePack or ValuePack Plus. This is a number portability service that allows you to retain your existing fixed-line phone number when you switch from other operators to StarHub. You can enjoy the benefits of Digital Voice Travel without giving up your existing fixed-line phone number.

Please contact our Customer Care at 1633 if you wish to apply for this service. Upon application, we would arrange on your behalf with other operator to terminate your existing telephone number and to transfer it to StarHub. The process would typically take more than 5 working days, as time is required by the other operator to process the request. After the service is activated, your telephone number (from the other operator) would be shown as your Digital Voice Travel Caller ID and would be the telephone number used in our bills.

I am a Digital Voice Home subscriber, can I port my line to Digital Voice Travel?
Currently, we do not support porting Digital Voice Home line to Digital Voice Travel.

I am a Digital Voice Home subscriber with Number Retention service, can I port my line to Digital Voice Travel?
Currently, we do not support porting Digital Voice Home line with Number Retention to Digital Voice Travel.

I am a Digital Voice Travel subscriber, can I port my line to Digital Voice Home?
Currently, we do not support porting Digital Voice Travel line to Digital Voice Home.

I am a Digital Voice Travel subscriber with Number Retention service, can I port my line to Digital Voice Home ?
Currently we do not support porting Digital Voice Travel line with Number Retention to Digital Voice Home.

Is Digital Voice Travel available to business customers?
Digital Voice Travel is only available to residential customers.

Can I retain my existing business fixed-line phone number if I subscribe to Digital Voice Travel ?
No, Digital Voice Travel is only applicable for residential users. Please check that the fixed-line phone number that you wish to retain does not belong to a business service under your current service provider before you apply for Digital Voice Travel.

Is there a more convenient way for me to inform callers of my new Digital Voice Travel Number?
One possible solution is to subscribe to SingTel's Telemail service, which allows your caller to leave voice messages. You can also customise your Telemail greeting to inform them about your change of phone number and to call your new Digital Voice Travel number. Please contact SingTel at 1609 to find out about the charges. Please note that you would need to keep your SingTel line active for the duration you wish to have the Telemail service.

Is there any internal wiring required for Digital Voice Travel?
No internal wiring is required if you connect your telephone set to the back of the IAD using an ordinary double-ended RJ-11 cable. However, you need to install internal wiring if you wish to install the telephone set some distance away from the IAD (e.g. another room). Please inform our Customer Care Consultants upon your subscription to Digital Voice Travel service, should you require internal wiring.

We recommend the use of a cordless telephone set should you wish to avoid installing additional wiring.

What is the effective distance from the telephone line to the IAD?
The maximum distance supported by an IAD will be up to approximately 1,000 feet.

What does the IAD do?
The IAD converts analogue voice signals from a standard telephone to digital data that can be transmitted through a broadband device across the Internet. It provides an alternate means to make voice calls. It also performs a basic routing function to enable simultaneous voice and data communication.

Is the IAD's power supply compatible with 110v or 220v?
The IAD's power supply is compatible with both 110v and 220v.

How do I know that the IAD is working?
When you power on the IAD, the LED display lights would start to blink. In the operational ready state, the LED light would turn solid green. If you plug in your telephone set into the telephone jack at the rear of the IAD, you should hear a dial tone within 5 minutes. You can start making or receiving calls once you hear the dial tone.

Do I need to keep the IAD powered on at all times? If there's a power failure, can I still be reached?
The IAD needs to be powered on at all times. It would not work if there is a power failure. However, if you subscribe to voicemail, which is included in the Value Pack and Value PackPlus bundles, your calls will be transferred to the voicemail mailbox.

Does keeping the IAD powered on at all times consume a lot of electricity?
The IAD is a low-power device, so it consumes very little electricity. It is approximately the same as operating a cordless phone.

Does the IAD have standby power back-up?
No, the IAD does not have standby power back-up. It would not work in the event of a power failure, that means you cannot make any outgoing calls or receive incoming calls.

If you are concerned about power-related disruptions, we would like to suggest that you install a back-up power option such as an "Uninterruptible Power Supply" (UPS) unit. The UPS would provide back-up power in the event of a power failure, not just for the IAD, but also for PC and other equipments in the house.

Does Digital Voice Travel support answering machines or similar devices?
Most answering machines should work, but some models, especially older ones, may have compatibility issues, as Digital Voice Travel is operating over a newer technology platform.

We recommend that you check with the equipment vendor for more information. Alternatively, you can call our Customer Care at 1633 to subscribe to our Voicemail service.

Can I use multiple phones with Digital Voice Travel service?
Yes, some of our customers use cordless phone systems that come with a base unit and extra handsets. The base station of the cordless telephone plugs directly into the IAD. Multiple handsets can be placed anywhere in the house. However, the Caller-ID display of certain cordless phone may not work properly with Digital Voice Travel.

Can I use my pulse-dialling phone with Digital Voice Travel?
No, Digital Voice Travel does not support pulse-dialling phones. Pulse dialling is usually found in older model phones, whereas most modern phones operate on tone dialling. Please check that the phone you intend to use with Digital Voice Travel supports tone dialling.

Does Digital Voice Travel support dial-up modem usage?
For data communications, Digital Voice Travel is designed for optimised broadband connections via its RJ-45 (Ethernet) port that are available on the IAD. As such, dial-up narrowband data type of communications via the RJ-11 port is not a supported usage.

Does Digital Voice Travel support faxing?
Like any other activities over the Internet, faxing over Digital Voice Travel is dependent on the network conditions beyond StarHub's control such as congestion or disruptions. Users may encounter dropped transmission or degradation fax quality. As such, we are unable to support faxing over Digital Voice Travel.

Can I use Digital Voice Travel for my home security system?
As your home security system is an essential service, we strongly recommend that you consult your system vendor first before connecting your home security system to Digital Voice Travel. We would be glad to provide any relevant information to your vendor, if necessary. Please note that your home security system will not work in the event of a power failure, as the IAD does not have standby power back-up. In the unlikely event that there is a Digital Voice Travel outage, your home security system will not work as well.

Can I operate a virtual private network (VPN) application behind the IAD?
Yes, it should support most VPNs operating IPSEC and PPTP, the most common VPN protocols.

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Can I surf the Internet and make a voice call simultaneously?
Yes, you may. However, the voice quality of your on-going call may be affected, depending on the volume of data traffic.

Is there a minimal broadband speed for Digital Voice Travel to work properly?
To support 1 IAD (line) per broadband connection, StarHub's MaxOnline 2000 broadband access plan should be adequate. For other broadband service provider users, it is advisable to have a minimum download speeds of 512Kbps and upload speeds of up to 128Kbps.

To support more than 1 IAD (line) per broadband connection, it is advisable to have a minimal broadband speed of 128K x N (where N is the number of IADs connected to a single broadband access). This requirement applies for both upload and download speeds.

Note: The above recommendation on minimum broadband speed do not take into account where there are simultaneous heavy Internet data usage activity, such as downloading/uploading of huge files, as this type of activity can still affect the voice quality.

For Motorola VT1005S Voice Terminal, you will require a router to support more than 1 IAD (line) per single broadband connection. To find out which routers are supported for multiple IAD (lines) set-up, please call our Customer Care at 1633.

Is there an advantage in using MaxOnline broadband than say, SingNet?
Although Digital Voice Travel will work over both cable and ADSL networks, StarHub will naturally be able to give better support to customers using MaxOnline. It should be noted that Digital Voice Travel supports only ADSL modems with Ethernet (RJ45) connectors.
Please note that not all ADSL modems and routers are supported by Digital Voice Travel.

Does Digital Voice Travel support ADSL modem with a separate router?
Please refer to our Customer Care to determine if a particular ADSL modem or router will be supported on Digital Voice Travel. Do note that technical support provided by StarHub to resolve issues when used with ADSL modems (routers) will be limited as these are 3rd party services/equipment provided by other service providers.

My ADSL modem only has a USB connection. Will the IAD fit into my network?
You will need to switch to an ADSL Ethernet modem in order to connect to the Ethernet port of the IAD.

Will my IAD work when I bring it overseas? Are there any restrictions?
Yes, you can use Digital Voice Travel when overseas by connecting it to a broadband device. Your Digital Voice Travel will operate as if you are still in Singapore. When you use the IAD to make a call to a Singapore-registered number, your call is charged like a local call, and not an IDD call.

However, we cannot provide assurance that Digital Voice Travel will work over networks that are not within the control of StarHub. We recommend that you check with the broadband service provider in the country you will be in to check if there are any regulations or restrictions on using VoIP service. Also, if you are accessing from a broadband network with a firewall, you may not be able to use Digital Voice Travel.

Note: For example, when you are in the US and you wish to use Digital Voice Travel to call a US number, you have to make an IDD call using StarHub's IDD 018 and 008 or those of other IDD service providers provided you have already registered an account with them.

How can I ensure that the Digital Voice Travel service works when I bring my IAD overseas?
Before you bring your IAD overseas, you are advised to try the equipment and the Digital Voice Travel service in Singapore. This is because if you encounter issues related to a faulty IAD, StarHub can provide for on-site troubleshooting.

Please also check with the respective overseas Internet service provider if they will block VoIP traffic on their network. Do ensure that the broadband speed is sufficient and the modem you intend to use provides Ethernet interface.

However, please note that we cannot provide any guarantee that the service will work while you are overseas as the networks/equipment related to the broadband access are not within our control. Therefore, we will only provide support on best effort basis in such instances.

If I have any connection or call issues when I am overseas, how can I contact StarHub ?
You can call our Customer Care at (65) 6820 1633 when you are overseas. However, you will have to pay for the IDD/call charges for the respective calls made if you are using the IDD from an overseas service provider. As we are unable to provide on-site troubleshooting while you are overseas, we will only perform troubleshooting remotely such as checking for service connectivity etc. Therefore, we will only support on a "best effort" basis.

Suddenly, I am unable to receive any incoming calls. What is the cause?
The inability to receive inbound calls is directly related to the IAD's ability to register with our proxy server. If the IAD is not registered, our network will be unable to route calls to the IAD. Some of the possible causes are:
• Power outages • Loss of Internet connectivity • Router/firewall security options blocking Digital Voice Travel traffic.

If this problem occurs, please verify that you have Internet connectivity and check your router/firewall security settings. Next, reboot the IAD by unplugging the power cord for 15 seconds, and then plug it back in. This will initiate a new registration request. Wait 5 minutes for the device to completely boot up, before attempting to make a call.

Is there any Quality of Service (QoS) implemented on the IAD?
Voice packet delivery over the Public Internet is typically best effort. However, the IAD provides upstream voice prioritisation to ensure that upstream voice data has priority over other Internet data. This ensures good voice quality even during heavy upstream data transfers such as e-mail synchronisation or file sharing.

How is the voice quality?
The voice quality should be reasonably good but as it operates over the Internet, there is no assured quality of service. The voice quality will depend on the Internet network condition and whether there is heavy simultaneous data traffic such as file downloading.

What is the cause of static on the line?
Static or buzzing noises on your line can only occur on the analogue side of the phone system, which consists of your phone and phone cable. Once the signal is sent through the IAD, it is digitised and does not create static or buzzing. You may wish to perform the following:
1. Try replacing the telephone cable and/or telephone.
2. Cordless telephones can generate static due to a weak signal connection between the base of the telephone and the handset. Weak signals can be due to low batteries in your handset, or the recommended range between the handset and base station has been exceeded.
3. If you are using a wireless router, try moving it away from the IAD as each wireless device may interfere with each other.

What is the cause of "choppy" calls?
Choppy calls are usually caused by high latency or packet loss in the ISP's network.
1. High latency occurs when it takes too long for the data to be transmitted over your Internet connection.
2. Packet loss occurs when information is lost over your Internet connection.

Either symptom can be caused by ISP (Internet service provider) problems, Internet congestion, or heavy bandwidth usage such as online gaming or file sharing.

What is the cause of voice echoes and is there any way to eliminate this problem?
In a voice telephone call, an echo occurs when you hear your own voice repeated. Problems with echo usually originate on the other end of your call. This is due to latency on your Internet connection, which causes the delayed playback of your voice.

There are two ways echo can occur:
1. Electrically through poor quality phone cables.
2. Acoustically (feedback) through sound waves between the phone's speaker and microphone.

Try asking the other party to lower the phone volume in order to reduce the feedback of your voice. As a last resort, try different telephone sets to reduce echo, as the quality of the telephone is important and some telephones have special echo-cancellation technology.

What is the cause of dropped calls?
Dropped calls are usually associated with Internet connectivity issues. High latency and packet loss can affect your call.
1. High latency occurs when it takes too long for the data to be transmitted over your Internet connection.
2. High packet loss occurs when information is lost over your Internet connection.

Either symptom can be caused by ISP (Internet service provider) problems, Internet congestion, or heavy bandwidth usage such as online gaming or file sharing.

If I were advised by the Customer Care Consultant to reset the IAD because of a problem with my broadband service, would the Digital Voice Travel service be affected?

The Digital Voice Travel service would be temporarily unavailable while the IAD is re-booting and performing the start-up diagnostics or when there is network interruption. You can resume using the service once you hear the standard dial tone (depending on the model of IAD, it could take about 2-5 minutes from the time of re-booting).

I am physically in Singapore, can I dial Singapore emergency numbers (e.g Singapore Police Force) using Digital Voice Travel? How should I dial?
Yes, you can. When you are physically located in Singapore, you can dial Singapore emergency numbers. For example, you can dial "999" to contact the Singapore Police Force. However, since Digital Voice Travel is a portable service, you may need to inform the emergency department of your exact location if you need the emergency service at your location.

I am physically in an overseas country, can I dial the foreign emergency numbers using Digital Voice Travel? How should I dial?
When you are in an overseas country, e.g. in the US, you cannot call any of the US emergency numbers. You need to use a US-registered telephone line to make emergency calls in the US. This applies to any other overseas country you are in.

I am physically in an overseas country, can I dial the Singapore emergency numbers using Digital Voice Travel? How should I dial?
When you are in an overseas country, e.g. in the US, you can still call Singapore emergency numbers using the usual emergency dial codes like "999". Your call is treated just like any local call made in Singapore.

Can I still call emergency numbers such as 999 if there is a power failure?
No, you would not be able to make outgoing calls or receive incoming calls if there is a power failure.

What if I lose the IAD?
Please report the loss immediately to our Customer Care at 1633. This is important because you are liable for all call charges incurred until you report the loss to us.

What do I do if I encounter a technical problem?
Please call our Customer Care at 1633

Voicemail Frequently Asked Questions

How can I access my mailbox?
Please dial 1303 followed by your password if you are calling on your Digital Voice Travel line. Alternatively, enter your mailbox number (your Digital Voice Travel phone number), followed by your password if you are calling from a mobile phone or on a fixed-line phone service provided by other service providers.

How many messages can be stored at any one time?
A maximum of 5 messages can be stored at any one time. Duration of each message can be up to one minute.

Can I personalise my Voicemail greeting?
Yes, you may. Please refer to the Voicemail section in the Digital Voice Travel Voice guide.

What do I do if I forget my password?
Call our Customer Care Consultants and we will reset it to the default password (8888) for you.

What happens if my mailbox is full and someone tries to leave a message?
The system will play a message that will inform the caller that your mailbox is full and he/she is unable to leave any message at that time. You are encouraged to delete your old messages constantly.

Can more than one person send the message at the same time?
Yes. More than one message can be left in your mailbox at the same time as long as it is within the allocated number of 5 messages.

If I accidentally delete a message during playback, can I retrieve it?
Yes, simply press *4 to recover the deleted message before the call is hung up.

Can I check my messages from any phone?
Yes, as long as the phone has touch-tone dialling facility. Dial 1303, enter your mailbox number (your Digital Voice Travel phone number), followed by your password.

When I re-direct a message, does a copy remain in my mailbox?
Yes, a copy of the message will remain in your mailbox till you delete it or when the retention period expires.

Will I be notified whenever there is a new message in my mailbox?
No, “Message Waiting Indicator” function is not available at the present moment.

A message I had previously stored in the mailbox is now gone. What happened?
Messages are purged automatically after four days (for new messages) or two days (for saved messages).

What is my voicemail local access number?
You can access your Voicemail by calling the short code 1303 or any of the local access numbers 6820 1303 or 9850 1303.

Can I have multiple Voice Mailboxes with Digital Voice Travel?
Currently each Digital Voice Travel account is given one voice mailbox per telephone line.

What is the maximum length of my voicemail greeting?
Your voicemail greeting may be up to 1 minute (60 seconds) long.

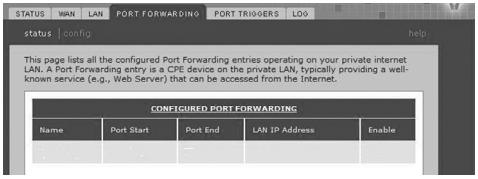
How do I stop my calls from going to Voicemail?
No, You cannot stop calls from going to Voicemail eventually in the event there is no answer for your forwarded phone number.

Appendix 1:
Port Forwarding Setting for Motorola SBG 1000 Cable Modem Gateway

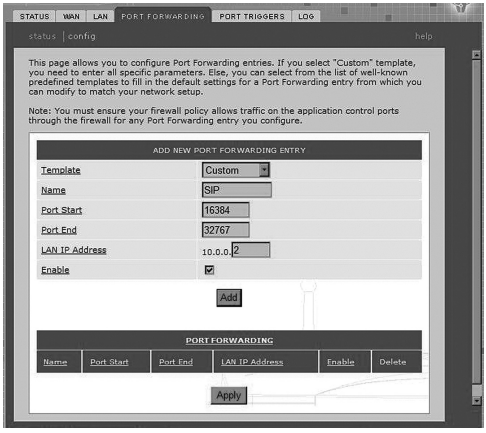
Configure “Port Forwarding” for the Motorola SBG1000 cable modem gateway on Port 5060/5061 and 16384-32767

Note: Please ensure that the firewall policy on the integrated cable router allows the Ports specified above.

In the menu on the left hand side of your screen, click the **Gateway** button. This will open a new menu at the top of your screen. In this new menu, click the **Port Forwarding** button.

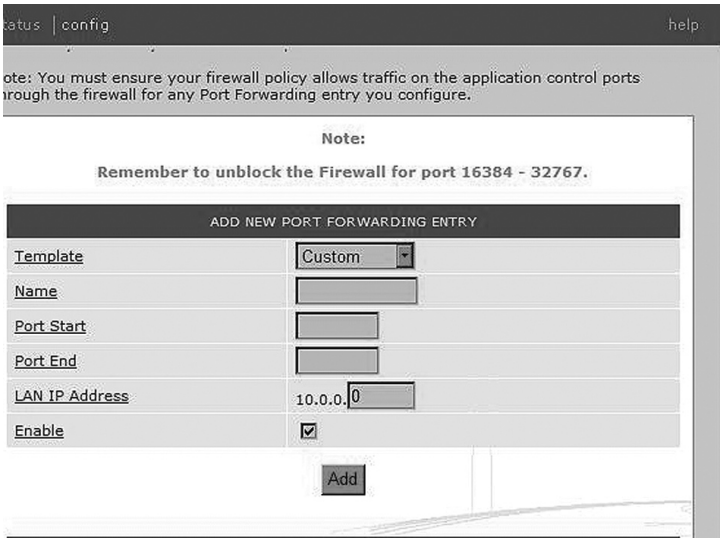

STATUS
WAN
LAN
PORT FORWARDING
PORT TRIGGERS
LOG
status | config
help
This page lists all the configured Port Forwarding entries operating on your private internet LAN. A Port Forwarding entry is a CPE device on the private LAN, typically providing a well-known service (e.g., Web Server) that can be accessed from the Internet.
CONFIGURED PORT FORWARDING
Name
Port Start
Port End
LAN IP Address
Enable

Close to the top of the status area, you should see a **config** option. Click **config**.

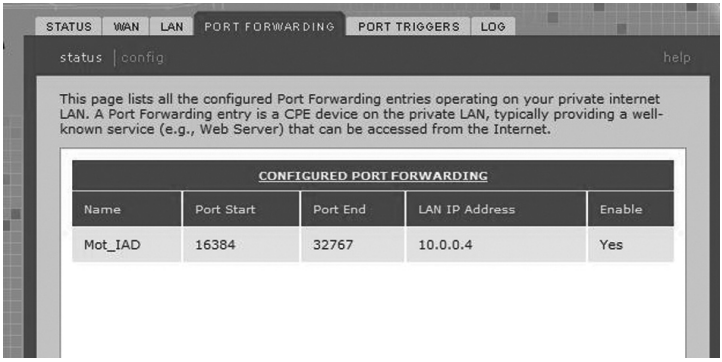

STATUS
WAN
LAN
PORT FORWARDING
PORT TRIGGERS
LOG
status | config
help
This page allows you to configure Port Forwarding entries. If you select "Custom" template, you need to enter all specific parameters. Else, you can select from the list of well-known predefined templates to fill in the default settings for a Port Forwarding entry from which you can modify to match your network setup.
Note: You must ensure your firewall policy allows traffic on the application control ports through the firewall for any Port Forwarding entry you configure.
ADD NEW PORT FORWARDING ENTRY
Template
Custom
Name
SIP
Port Start
16384
Port End
32767
LAN IP Address
10.0.0.2
Enable
Add
PORT FORWARDING
Name
Port Start
Port End
LAN IP Address
Enable
Delete
Apply

Use the Template drop down box to select **Custom (default)**. Enter the name of the program you are forwarding ports for into the **Name** box.

To forward a range of ports, e.g. UDP ports 5060,5061, 16384 -32767, enter the lowest port number in the range into the **Port Start** box. Enter the highest port number in the range into the **Port End** box.
Enter the IP address to forward these ports to into the **LAN IP Address** box. This should be the IP address of the IAD (Motorola VT 1005S Voice Terminal) you are forwarding ports for. Check **Enable** checkbox to enable your configuration.



Click the **Add** button to add the configuration to the table below.

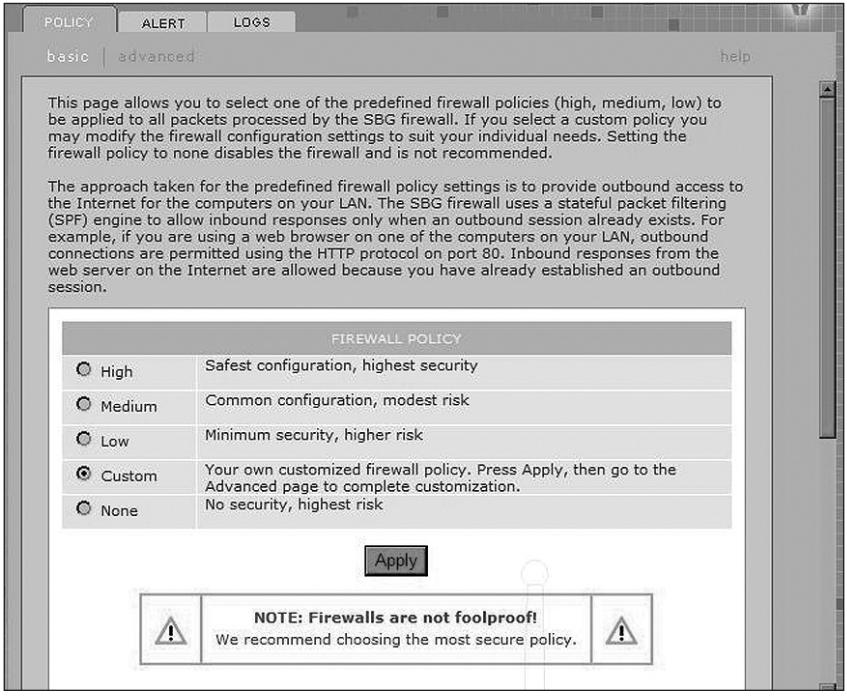


Appendix 2:
Setting up the Firewall for Motorola SBG1000 Cable Modem Gateway

To select a predefined policy for all packets processed by the firewall:

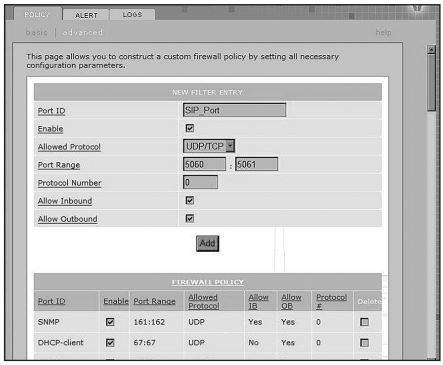
- On the set-up program left panel, click **Firewall**.
- Click **POLICY**.
- Click **basic** to display the options for firewall policy:

To create a custom firewall policy, first select **Custom** and click **Apply** on the Firewall > POLICY > basic Page. Then use this page to configure a custom firewall policy.


POLICY
ALERT
LOGS
basic | advanced
help
This page allows you to select one of the predefined firewall policies (high, medium, low) to be applied to all packets processed by the SBG firewall. If you select a custom policy you may modify the firewall configuration settings to suit your individual needs. Setting the firewall policy to none disables the firewall and is not recommended.
The approach taken for the predefined firewall policy settings is to provide outbound access to the Internet for the computers on your LAN. The SBG firewall uses a stateful packet filtering (SPF) engine to allow inbound responses only when an outbound session already exists. For example, if you are using a web browser on one of the computers on your LAN, outbound connections are permitted using the HTTP protocol on port 80. Inbound responses from the web server on the Internet are allowed because you have already established an outbound session.
FIREWALL POLICY
High
Safest configuration, highest security
Medium
Common configuration, modest risk
Low
Minimum security, higher risk
Custom
Your own customized firewall policy. Press Apply, then go to the Advanced page to complete customization.
None
No security, highest risk
Apply
NOTE: Firewalls are not foolproof!
We recommend choosing the most secure policy.

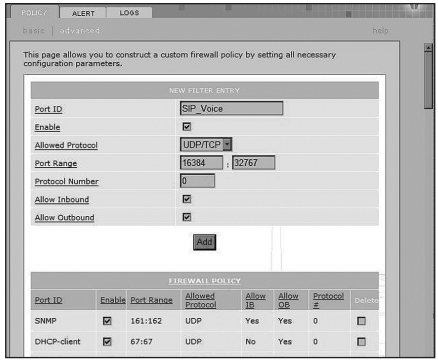
To open up the range of ports for **SIP UDP signalling ports**, eg. UDP ports 5060,5061, enter name of the Port ID of this firewall policy.

- Put a check mark into the **Enable** checkbox to enable your firewall policy.
- Select allowed protocol UDP/TCP from the drop down menu.
- Enter the lowest e.g. 5060 and the highest port number; eg. 5061 in the **Port Range**.
- Enter zero for the Protocol Number.
- Put a check mark into the **Allow Inbound** checkbox to allow incoming packets through the firewall.
- Put a check mark into the **Allow Outbound** checkbox to allow outgoing packets through the firewall.
- Click the **Add** button to add this configuration to the table below.



To open up the range of ports for **SIP UDP Voice ports**, e.g. UDP ports 16384 - 32767, enter name of the Port ID of this firewall policy.

- Put a check mark into the **Enable** checkbox to enable your firewall policy.
- Select allowed protocol UDP/TCP from the drop down menu.
- Enter the lowest e.g. 16384 and the highest port number; e.g. 32767 in the **Port Range**.
- Enter zero for the Protocol Number.
- Put a check mark into the **Allow Inbound** checkbox to allow incoming packets through the firewall.
- Put a check mark into the **Allow Outbound** checkbox to allow outgoing packets through the firewall.
- Click the **Add** button to add this configuration to the table below.



Appendix 3:
Digital Voice Travel Subscription Plan

Price Plan		MaxOnline Customers
Basic Subscription	$10.49 per month	Waived

Value-Added Services	Monthly Subscription
Value Pack • Caller Number Display • Call Waiting • Call Divert • Voicemail Enjoy free~ Number Retention when you sign up for Value Pack	$4.82 per month
Value PackPlus • Caller Number Display • Call Waiting • Call Divert • Voicemail • Caller Number Non-display • Call Transfer • Private Number Listing Enjoy free~ Number Retention when you sign up for Value PackPlus	$6.96 per month

Other Service-Related Charges	
Installation	$53.50 per hardware
Service Activation	$42.80 per hardware
Service Call	$53.50 per trip
Subscription for Value-Added Service	$4.82 per month for Value Pack $6.96 per month for Value PackPlus
Activation of Value-Added Service	$10.70 per Value-Added Service
Golden Number Selection	$415.16 per number
Silver Number Selection	$94.16 per number
Disconnection	$32.10 (if subscription is less than 6 months)
Reconnection	$10.70
Telephone Wiring	$64.20
Installation charges and activation of Value-Added Service are waived for MaxOnline Customers.	

~ Valid till 31 December 2007.

Notes:

1. All rates quoted are inclusive of 7% GST.
2. Rates are correct at time of production. We reserve the right to change the rates from time to time and adjust the rates accordingly in the event of any revision to the applicable GST rate by the relevant authority. Please visit our website at www.**starhub**.com/voice for all updates rates.
3. The rate for each service call applies regardless of the nature of technical assistance unless the fault lies with the StarHub service.
4. Additional charges may be levied on other materials and services not listed above.

Disclaimer
Please note that all information provided in this User Guide is correct as at date of production.
For more information, please check the latest online updates at our website at www.**starhub**.com/voice.

Glossary

The following are some common terms used in our Digital Voice service for your easy reference.

TERM	DEFINITION
Digital Voice Travel	Digital Voice Travel is StarHub's Voice-over-IP (VoIP) service to residential customers.
Cable Point	This is the cable outlet on the wall, which offers a means of connection to StarHub's cable network.
Cable modem	This is a device that allows broadband data access (such as to the Internet) via StarHub's cable network. A cable modem typically has two connections, one to the cable wall outlet and the other to a computer.
Voice-enabled cable modem (VeCM)	A VeCM has all the functionalities of a cable modem but has additional telephony capabilities. It allows a user to have data access (such as the Internet) as well as the ability to make voice calls simultaneously.
IAD	IAD is a short form for "integreted access device". It allows a user to make voice calls when it is connected to any broadband network.
Value-Added Services	Value Added Services are value-added telephony features like Call Waiting, Caller ID Presentation etc. A separate subscription and activation charge is required.
Number Retention	This is a service which allows a customer to transfer their existing SingTel's residential telephone number over to StarHub's Digital Voice Travel.
Golden Number	Golden numbers are telephone numbers with special sequences such as "2828" etc. There is an additional charge for golden numbers.
Silver Number	Like golden numbers, silver numbers are also telephone numbers with special number sequences but they cost less than golden numbers.
RJ-11	Short form for Registered Jack-11, this is a two-wire connector widely used to connect telephone equipment. It looks similar to the RJ-45 connector, but is narrower.
RJ-45	Short form for Registered Jack-45, this is an eight-wire connector used commonly to connect computers onto a local area network (LAN), especially Ethernet networks.
Internal Wiring	A user would usually connect a standard or cordless telephone set directly to the phone jack of the IAD to make voice calls. Additional internal wiring is required if the user needs to place the telephone set at another location.
Upstream/ downstream	Upstream refers to the packets transferred from your end device, e.g. IAD, delivered through the Internet, to another IAD/telephone at the other end. When you have a conversation, the voice quality heard by the other party when you speak is dependent on the upstream bandwidth, while the voice quality you heard is dependent on the downstream bandwidth. Typically, broadband service providers provide varying upstream/downstream speeds.
PPPoE represent 'Point-to-Point Protocol over Ethernet'	PPPoE i.e Point-to-Point Protocol over Ethernet is a network protocol for encapsulating PPP frames in Ethernet frames. It offers standard PPP features such as authentication, encryption and compression. This protocol is being used by many DSL/ADSL carriers for connecting high-speed modems to the service provider.
De-militarised Zone (DMZ)	It is a part of the network sited between the (public) Internet and an internal network. A firewall or a router usually protects this zone with network traffic filtering capabilities whilst enabling external access to information.